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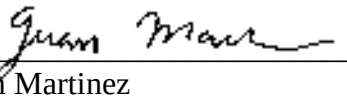
RF Hazard Evaluation Report on the Cellular OEM Module Model: CMM7700 & 8700

GRANTEE:	Standard Communications Corp. 1111 Knox St. Torrance, CA 90502
TEST SITE:	Elliott Laboratories, Inc. 684 W. Maude Ave Sunnyvale, CA 94086
REPORT DATE:	April 12, 2001
FINAL TEST DATE:	April 11, 2001

AUTHORIZED SIGNATORY: 

Juan Martinez
EMC Engineer

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GENERAL INFORMATION

Applicant: Standard Communication Corp.
1111 Knox St.
Torrance, CA 90502

FCC ID: **APV09001**

Technical Description

The CMM 7700 and CMM 8700 Cellular Radio Modules are OEM radio modules for use in embedded wireless data and other applications. They are part of a series of modules providing solutions for customers with limited levels of RF expertise. They provide a flexible turnkey module solution that can be used to implement all of the functionality of a Wideband cellular telephone into a variety of imbedded applications.

The CMM 7700 and 8700 are a fully functional Wideband cellular telephone module with a 3W (Class I) of maximum output power. **The difference between the CMM 7800 and 8700 is the protocol embedded in the units.**

Standard Communication will use the Centurion dipole antenna with their developer kit. The Centurion (Model: EXE-821-SM) 2.5 dBi gain antenna will be sold with the kit.

- Centurion Antenna (Model: EXE-821-SM), 2.5dBi gain

Frequency Range

Transmitter: 824.01 – 848.97 MHz
Receiver: 869.01 – 893.97 MHz

Range of Operation Power

3-Watt maximum power output

	ERP (Watts)	EIPR(Watts)
Centurion Antenna: 2.5dBi gain	3.558	5.836

SCOPE

RF Hazard Evaluation testing was performed for the equipment mentioned in this report. OET Bulletin 65 or the ANSI/IEEE C95.3, "IEEE Recommended Practice for the Measurement of Potentially Hazardous Electromagnetic Fields - RF and Microwave" were used as a test procedure guideline to perform the required test. MPE measurements were performed for this product.

The intentional radiator above was tested in a simulated typical installation to demonstrate compliance with the relevant FCC performance and procedural standards.

OBJECTIVE

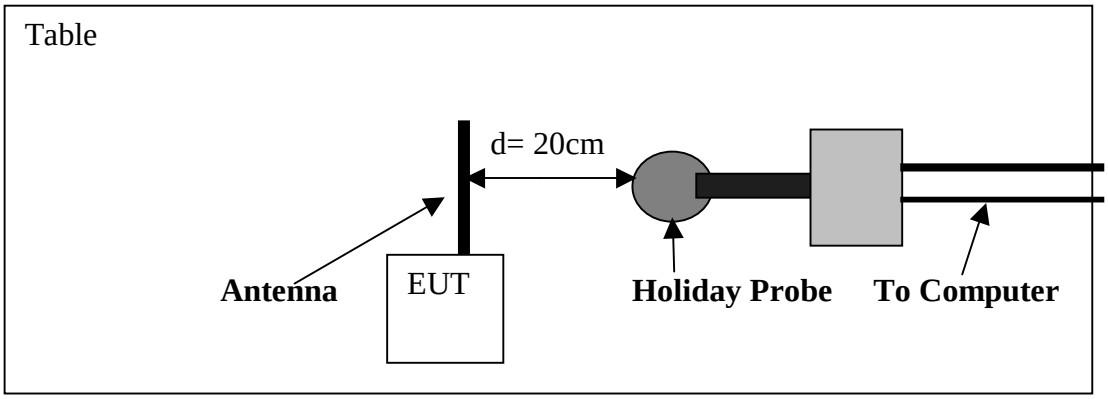
The primary objective of the manufacturer is compliance with Section 2.1091. Certification of these devices is required as a prerequisite to marketing as defined in Section 2.1033.

Certification is a procedure where the manufacturer or a contracted laboratory makes measurements and submits the test data and technical information to FCC. FCC issues a grant of equipment authorization and a certification number upon successful completion of their review of the submitted documents. Once the equipment authorization has been obtained, the label indicating compliance must be attached to all identical units subsequently manufactured.

TEST RESULTS

Section 2.1091: Radiofrequency radiation exposure evaluation: Mobile devices.

Test Setup:



Standard Communication will use the Centurion antenna (Model: EXE-821-SM) 2.5dBi gain with their developer kits. The Centurion (Model: EXE-821-SM) is the highest gain antenna that will be sold with the CMM7700/8800 OEM module.

MPE Evaluation was performed using the OET Bulletin 65 or the ANSI/IEEE C95.3, "IEEE Recommended Practice for the Measurement of Potentially Hazardous Electromagnetic Fields - RF and Microwave" test procedure, for mobile devices.

Only the Centurion (Model: EXE-821-SM) 2.5dBi antenna, was tested.

The EUT was set to transmit at maximum power of 3 watts, this was verified with a spectrum analyzer. The EUT was set to transmit continuous and the Fundamental frequency set to the middle of the EUT's frequency range. The EUT and its antenna were placed on top of a table, located in an Anechoic Chamber. The measuring probe was place 20-cm away from the EUT's antenna. The probe was moved around the antenna, while keeping the 20-cm separation. At the same time the probe was raised and lowered in height to measure the maximum points of the 2.5dBi antenna. The top of the antenna was also measured, 20-cm away. The probe was connected to a computer, which displayed the measured levels in mW/cm^2.

Please refer to Setup Photo# 1 under Exhibit 3.
Please, refer to data included under **Exhibit 2**: Test Measurement Data

To assure RF Hazard compliance, warning labels and statements on the manual will be used and proper installation instruction will be provided to the OEM integrator. The unit will require professional installation. Please, refer to **Exhibit 4**: Integration Guide.

EQUIPMENT UNDER TEST (EUT) DETAILS

The Standard Communication model CMM7700 & 8700 is a 824.01 – 848.97 MHz wireless OEM module, which is to be used in industrial environments for financial transaction-oriented data. The EUT consisted of the following component(s):

Manufacturer/Model/Description	Serial Number
Standard Comm./CMM7700 & 8700/OEM module	N/A
Centurion/ EXE-821-SM/2.5 dBi Antenna	N/A

ENCLOSURE

The EUT does not have an enclosure of its own. But, small RF shields are installed to shield the transmitter circuitry.

SUPPORT EQUIPMENT

The following equipment was used as remote support equipment for emissions testing:

Manufacturer/Model/Description	**Serial Number**	**FCC ID Number**

EXTERNAL I/O CABLING

The I/O cabling configuration during emissions testing was as follows:

Cable Description	Length (m)	From Unit/Port	To Unit/Port
N/A			

TEST SOFTWARE

During testing the EUT was set to transmit continuous at maximum power. Internal software was used to configure the EUT properly for the required tests.

TEST MODES

During emissions testing the transmitter was set to the normal operating mode using AMPS modulation.

EXHIBIT 1: Test Equipment Calibration Data

EXHIBIT 2: Test Measurement Data

The following data includes conducted and radiated emission measurements of the Standard Communication model CMM7700 & 8700.

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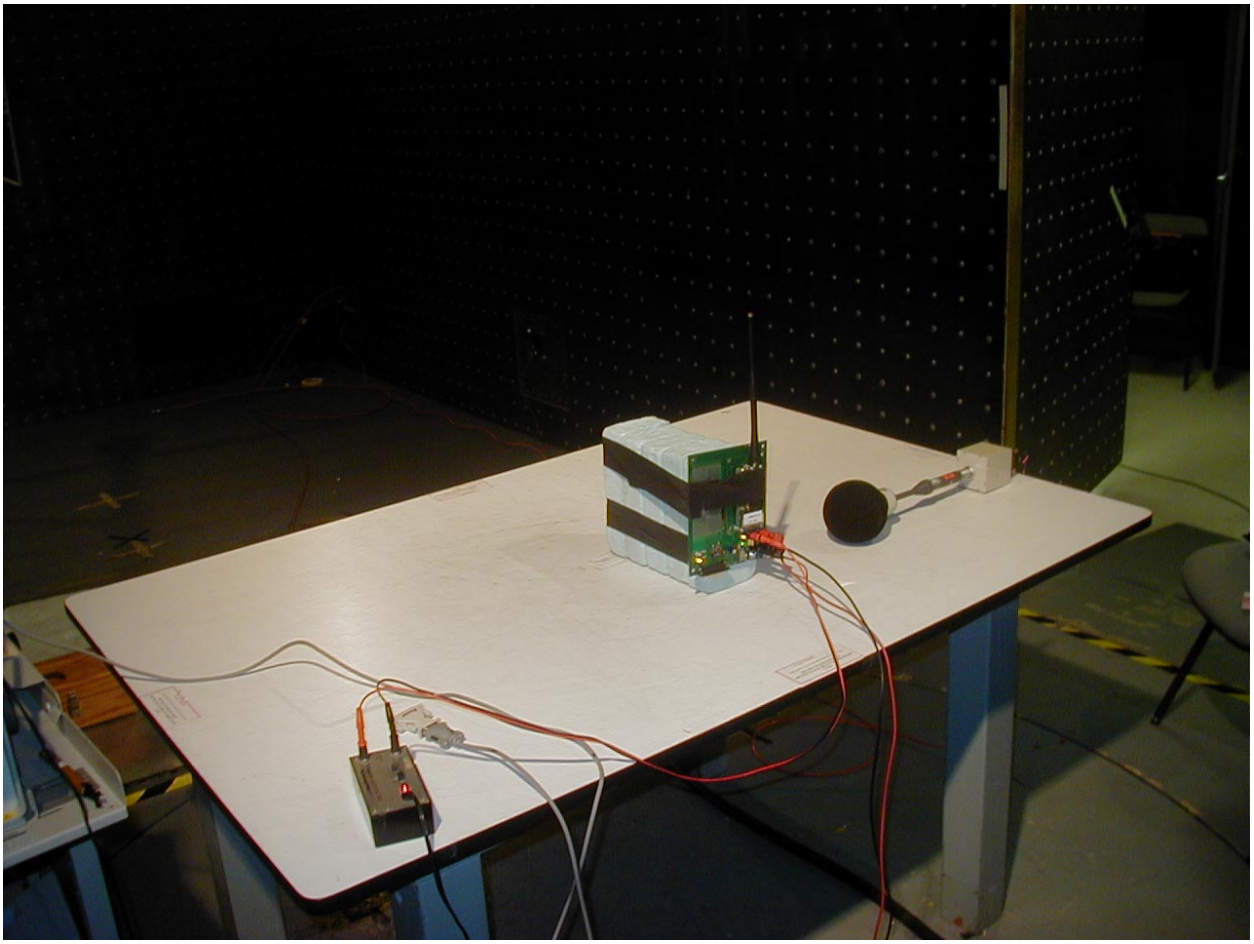
EXHIBIT 3: Photographs of Test Configuration



Setup Photo# 1

EXHIBIT 4: Integration Guide

13 pages